Nova 2000

SUPPLEMENTAL OPERATION MANUAL

ilco

This manual applies specifically to the Nova 2000 Key Machine. It properly identifies your model and assures you will receive correct parts if and when you require replacement parts. Retain this manual in a safe place. If ownership of this machine is transferred, this booklet should accompany the machine. When seeking service information about this machine, refer to the Model No. (which is Nova 2000) and the part number desired (see pages 5 - 7).

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ONE YEAR LIMITED WARRANTY

Kaba Ilco Corp. warrants to the original buyer of any new model Nova 2000 machine that it will repair or replace, at its option, any part of any machine which proves, to the reasonable satisfaction of Kaba Ilco Corp. to have defects arising from the faulty manufacture of the machine or from defective material or components, during a period of one (1) year from the date of the shipment of the machine by Kaba Ilco Corp., provided that the machine is returned by prepaid transport to Kaba Ilco Corp. or to its authorized representative before the expiry of the warranty period together with a detailed description of the alleged defect (s). Kaba Ilco Corp. may, at its discretion, elect to refund the purchase price allocable to the part affected, or to issue a credit if the price therefore remains unpaid.

Kaba Ilco Corp. sells precision-made machines. The buyer assumes all risks, and Kaba Ilco Corp. shall not be liable for any reason if the machine has been subjected to improper installation, improper use, improper or inadequate maintenance, negligence, if any unauthorized modification or alteration is made to the machine, or in case of accident. For greater certainty, any machine not operated in accordance with Kaba Ilco Corp. printed instructions or operated beyond its rated capacity shall not be covered by this or any other warranty.

Any and all warranties made by Kaba Ilco Corp. on any machine, product, or component thereof shall be effective only if and for so long as the buyer complies with all payment obligations pursuant to the buyer's accepted and acknowledged order. Failure to meet such payment obligations shall void all warranties and not extend the period of time for which such machine, product or component thereof is warranted irrespective of whether or not payment is eventually made.

These warranties are in lieu of and not in addition to any other warranty of condition, expressed or implied, including without limitation merchantability, fitness for a particular purpose or latent defect. The buyer releases Kaba Ilco Corp. from any liability for any reason other than a breach of its warranties hereunder.

The liability of Kaba Ilco Corp. shall in no case, including negligence, exceed the purchase price of the defective machine, nor shall Kaba Ilco Corp. be liable for any personal injuries, property damage or consequential damages.

Use only genuine Kaba Ilco Corp. replacement parts on this machine!

WARNING - SAFETY NOTICE

IMPORTANT: PLEASE READ CAREFULLY
BEFORE OPERATING MACHINE

Safety begins with education, and continues with proper application ... **ALL** personnel who operate this machine should **READ THE SUPPLIED OPERATOR'S MANUAL** for information on how to properly operate the Nova 2000. The likelihood of accidents and miscuts will be greatly reduced.

General Safety:

- Safety glasses **MUST BE WORN** to reduce the possibility of eye injury while operating or in the immediate vicinity of key cutting equipment.
- Always **turn machine off** before making adjustment or inserting or removing keys.
- Machine should be located in an area accessible only by **authorized operators**. Location must be such that customers and other personnel are not subject to potential injury from "flying chips".
- Do not defeat safety features built into the machine. Removal or modification of safety shields, cutter guards and other safety devices should be strictly forbidden.
- **At no time** should the mechanically driven parts of the machine be touched while it is in operation. Extra care should also be taken by the operator to ensure that loose fitting clothing, long hair, etc. are kept from the area of machine operation.
- Your machine has been specifically designed and built for key cutting purposes only and should be operated according to its operator's manual. All other uses are strongly discouraged as they could be potentially hazardous, and should not be attempted? Such use will immediately void the machine warranty.
- Some states have specific age restrictions concerning the operation of certain types of equipment. Check local and state ordinances for compliance.

Electrical Safety:

- (120 volt models) Your machine is designed to operate using 120 Volt AC, 60 Hz electrical current. It is supplied with a three-prong power plug which should be used with a properly grounded three-prong outlet only. Do not defeat the safety purpose of the plug by modifying or using with non-grounded outlets.
- To reduce risk of fire or electrical shock, do not expose or operate machine in damp or wet locations.
- Electrical problems should be referred to qualified repair technicians. If the machine is under warrant, contact Kaba Ilco Corp. (Kaba Ilco Corp. also offers repair service for out-of-warranty machines. Contact for details.)
- Always unplug the machine before opening the hood or changing the cutter.

INTRODUCTION

The Nova 2000 is a precision engineered key machine specifically designed for duplicating high security type keys. As shipped, the Nova 2000 will efficiently duplicate high security "centerwinder" and "sidewinder" automotive keys (as used by Mercedes Benz®, Saab®, Volvo® and others) as well as keys that fit various "dimple key" lock systems. A wide variety of optional adapters and cutters are also available that enable the Nova 2000 to duplicate keys for an even broader range of high security lock products.

This unique key machine has the ability to duplicate keys to exacting specifications, resulting from the precise accuracy of its many parts. The Nova 2000 was designed with the operator in mind, from the versatility of the vise jaws to the easy one-handed operation of the machine.

Because of the precision nature of the vise jaws, avoid any abuse that will damage or reduce their accuracy. Treat them with care and the jaws will help produce accurate keys for years.

UNPACKING INSTRUCTIONS

When unpacking the Nova 2000, you will note the cushioning material and the abundance of lubricating oils to prevent rust and corrosion. Before using this machine, wipe off excess grease and oil. Lubricate only the moving parts. It is a good idea to save the original packing carton for later shipment if necessary.

Place the key machine on a sturdy, level work bench with good lighting. The 115 VAC receptacle should be properly grounded. Do not use a two-prong plug adapter. Unpack all cutters, key guides, and adapters. Wipe each part free of grease and oil. Be sure to keep all operating parts as free as possible from cutting debris to maintain trouble free operation. Store accessories in an organized manner, protecting them from damage or loss.

It is strongly recommended that this manual be thoroughly read by anyone who plans to operate the Nova 2000. Fig. 1 should be studied in order to learn the general operating parts of the machine and their nomenclature.

CAUTION! DO NOT DESTROY OR DISCARD THE SHIPPING CARTON. STORE IT CAREFULLY IN A SAFE PLACE. IN THE EVENT OF A PROBLEM WITH YOUR MACHINE, IT SHOULD BE RETURNED TO OUR SERVICE FACILITY IN ITS ORIGINAL PROTECTIVE CARTON.

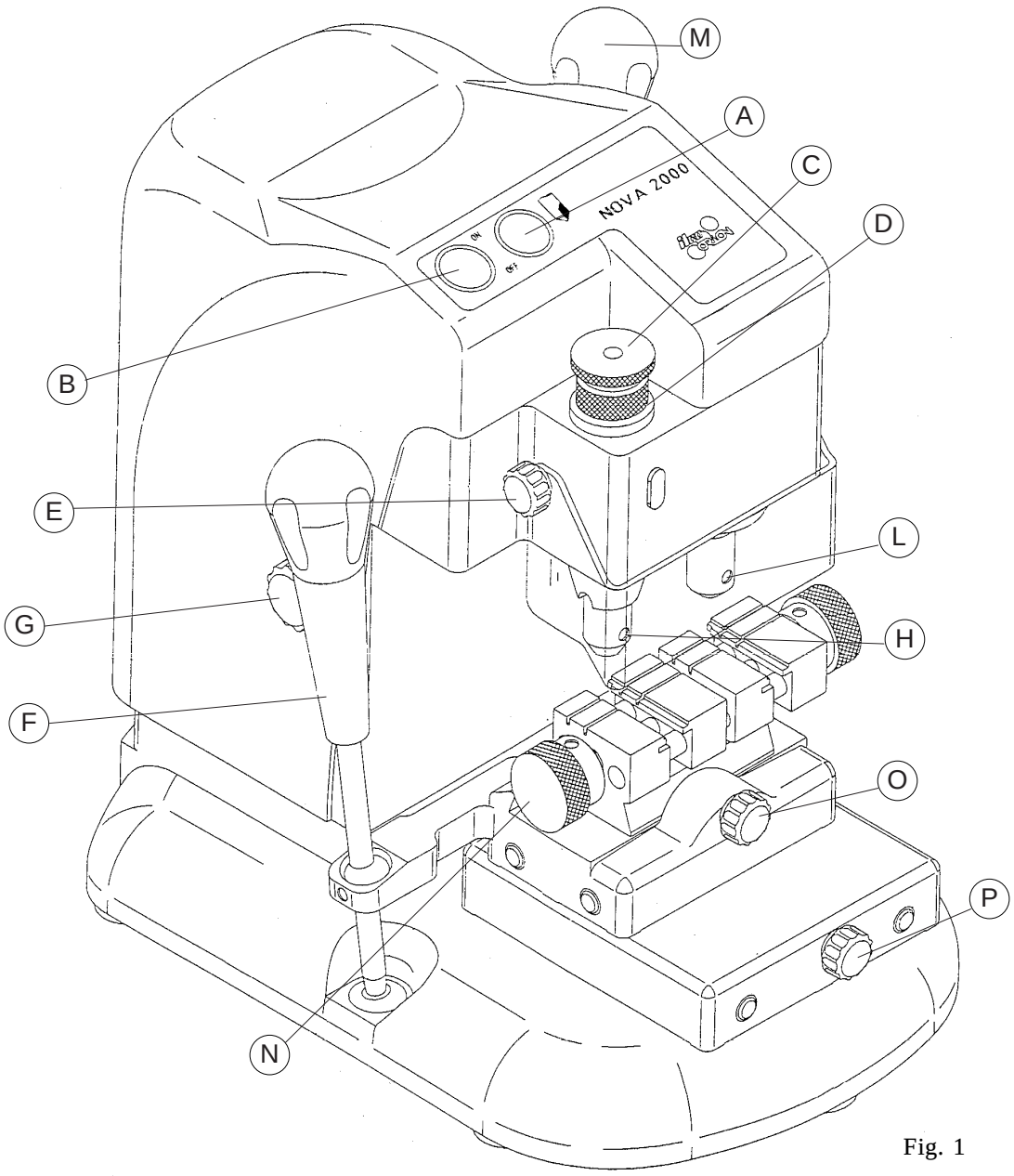


Fig. 1

Ref.	Description	Ref.	Description
A	Cutter Switch	H	Cutter Guide Locking Screw
B	On/Off Switch	L	Cutter Locking Screw
C	Spring Mechanism Control Knob	M	Right Lever
D	Depth Adjusting Knob	N	Left Vise Jaw Clamping Knob
E	Depth Adjustment Locking Knob	O	Vise Assembly Locking Knob
F	Carriage Movement Lever	P	Carriage Locking Knob
G	Vertical Movement Locking Knob		

EXPLODED VIEW - MECHANICAL

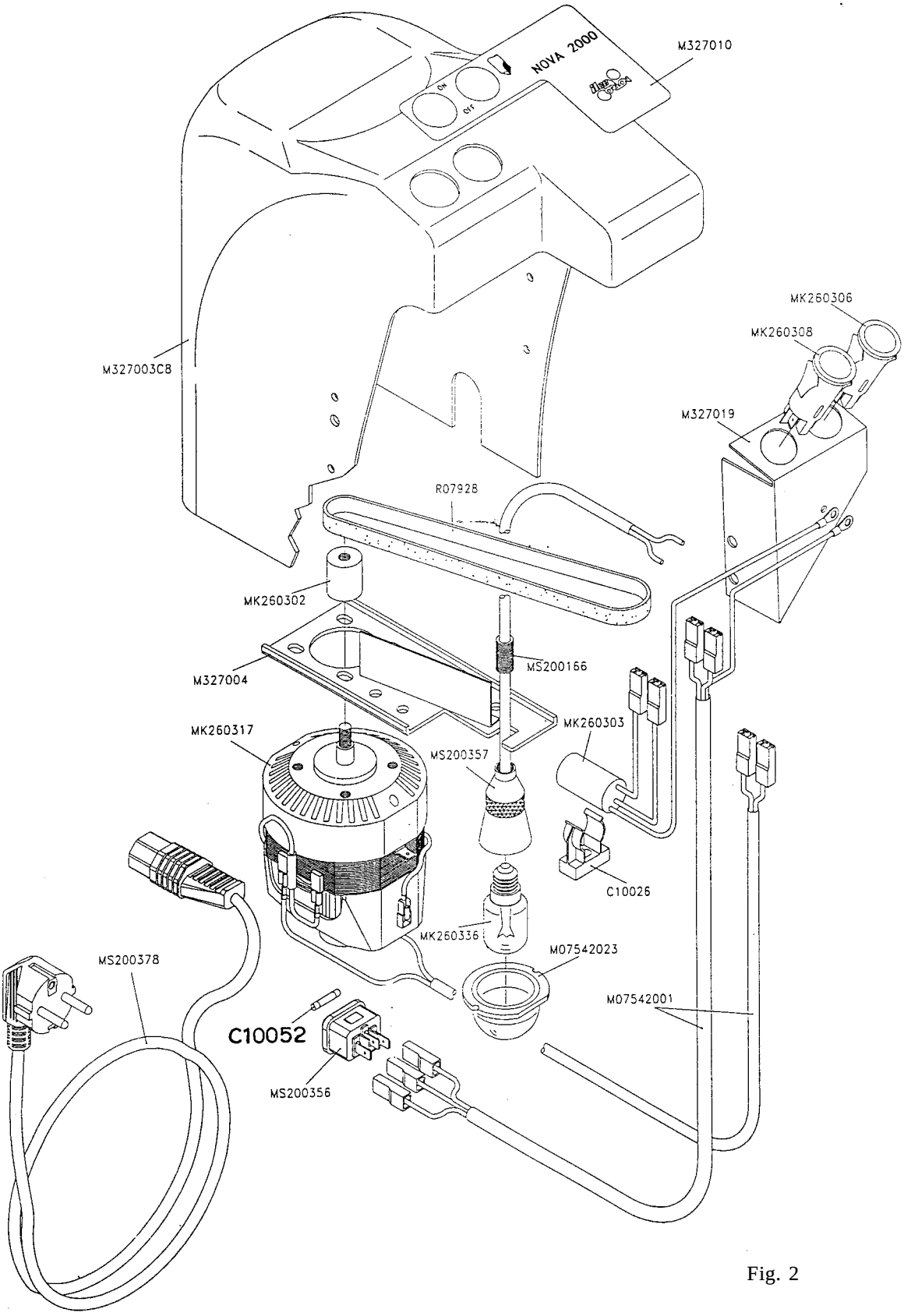


Fig. 2

EXPLODED VIEW - ELECTRICAL

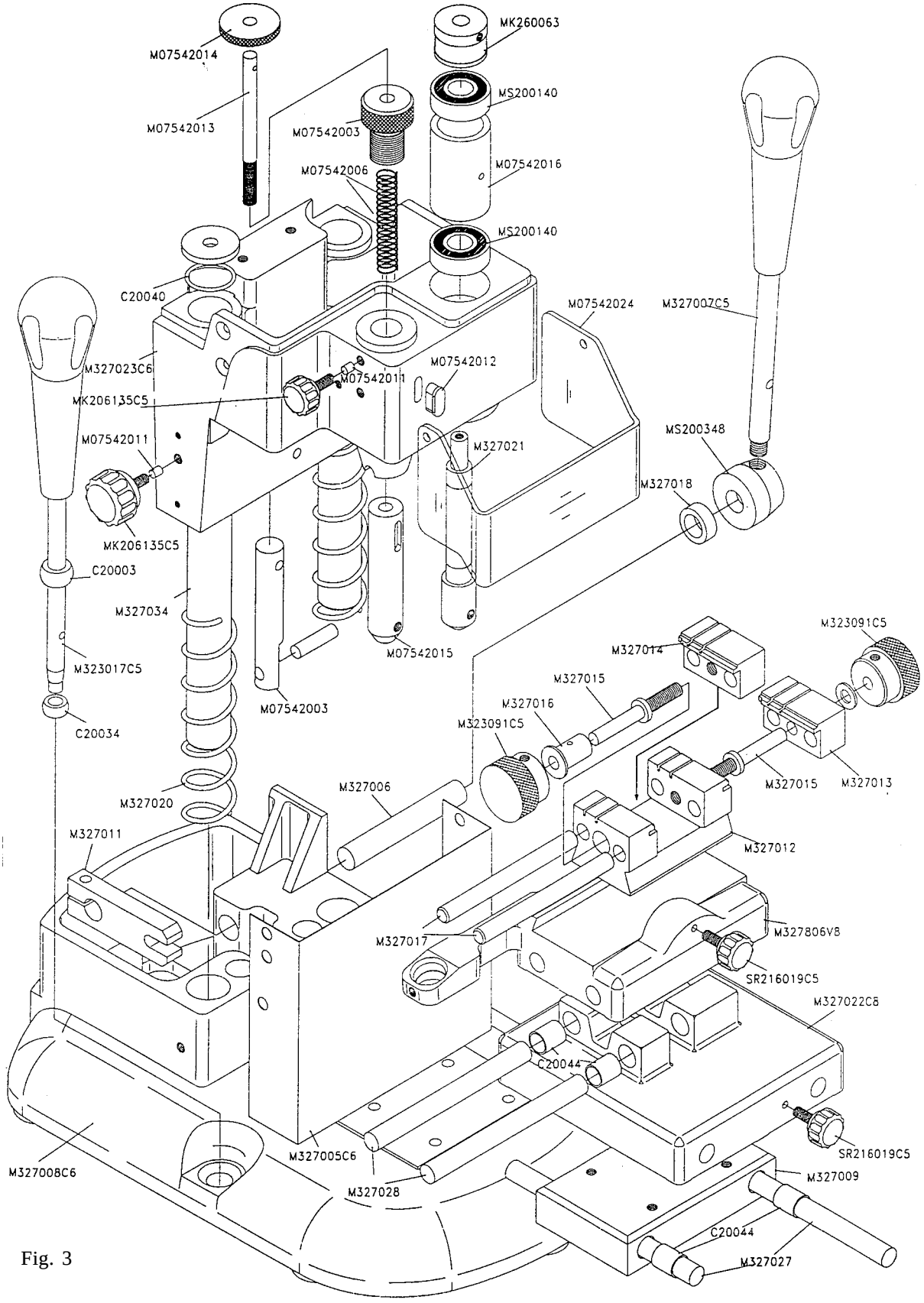
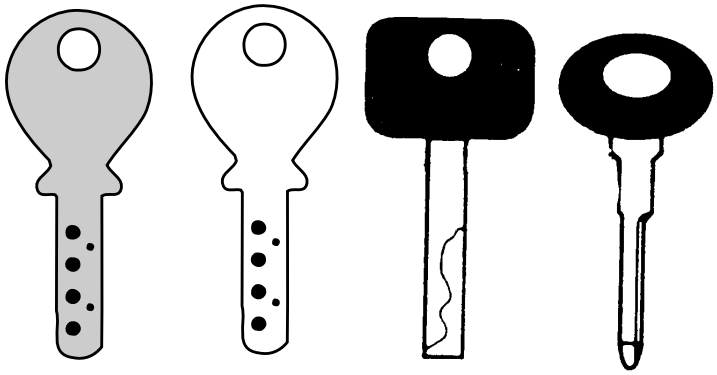


Fig. 3

BASIC OPERATION

The Nova 2000 is designed to duplicate various types of high security keys. As shipped, this versatile machine duplicates "sidewinder" style automotive keys, as well as several "dimple" types. Optional cutters and accessories are available that will broaden the range of keys that the Nova 2000 can duplicate (see page 12).



Dimple Keys Sidewinder Keys

Three basic steps should occur before the duplication process actually begins:

1. Key Blank Selection: The key blank selected must be correct for the intended application.
2. Cutter/Cutter Guide Selection: The cutter and corresponding cutter guide installed on the Nova 2000 must be correct for the type key being cut (see chart on page 12).
3. Positioning of the Key Blank and Pattern Key: Also referred to as "gauging", this process involves inserting the blank and pattern keys into the machine vise jaws in a manner that assures proper placement of cuts on the blank during the duplication process.

Installing Cutter and Cutter Guide.
Note: Always be sure that the machine power is "off" before installing or changing cutters!

The cutter and cutter guide must "match" in order to cutter accurate keys. Refer to table 1 at the back of this booklet for matching cutter, guide numbers, and applications.

After selecting the cutter and guide required for the intended application, install them as shown in figure 4 below, by positioning them as far as they will go into their corresponding chucks, and tightening set screws "L" and "H". Note: The machine's depth-of-cut adjustment must be reset each time a cutter or cutter guide is installed on the machine.

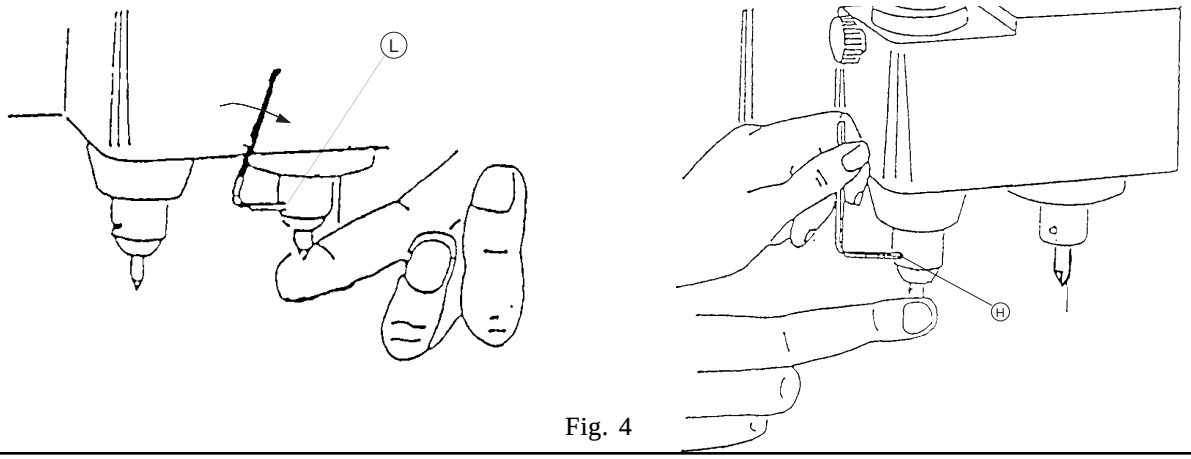


Fig. 4

ADJUSTMENT OF CUTTER AND CUTTER GUIDE

Periodically check the machine's depth adjustment and recalibrate if necessary to compensate for possible cutter wear. In addition, as previously stated, **the depth adjustment must be reset anytime a cutter or cutter guide is installed on the machine**.

Depth Adjustment (Perform steps 1-4 with power off)

1. Verify the vise jaw clamping surfaces are free of dust and chip debris generated from cutting keys.
2. Insert two key blanks (must be same type) into the machine's vise jaws. Confirm they are positioned "flat" and level within the jaw. Tighten the clamping knob on each jaw as this is done.
3. Pull the Vertical Movement Lever "M" (see page 5 for part identification) towards you to allow the cutter and guide to contact the two blanks. (Fig. 5) Loosen locking knob "G" if required.

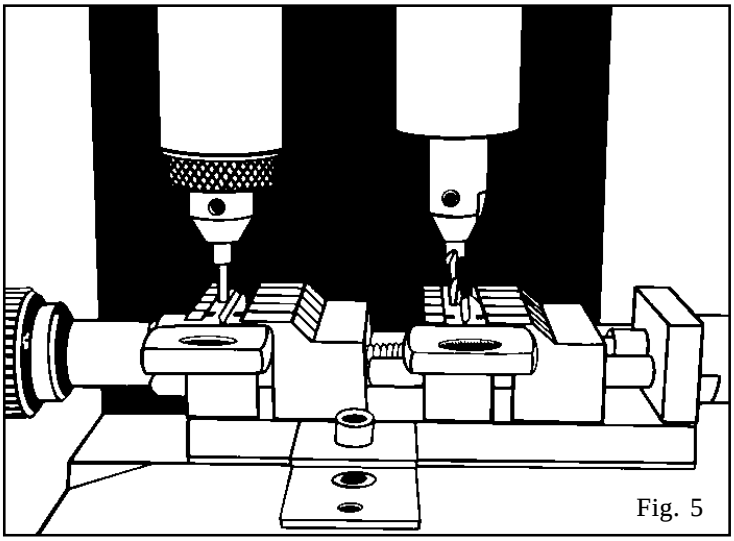


Fig. 5

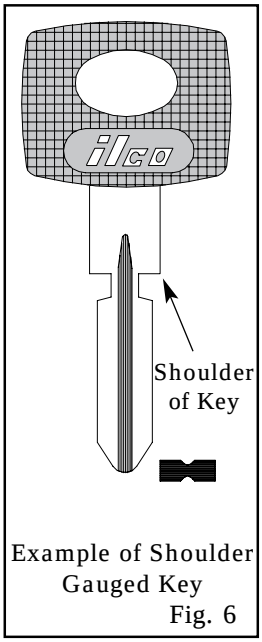
4. Loosen the Depth Adjustment Locking Knob "E" and rotate the Depth Adjusting Knob "D" left or right, as required, until the cutter end guide contact both key blanks at the same time. Once this step is accomplished, tighten the Spring Mechanism Control Knob "C" to assure that it wasn't loosened during the previous procedure.
5. Check the final adjustment by turning the power and cutter motor switch on, lower the cutter to the flat surface of the blank using the Vertical Movement Lever "M". The cutter should "barely graze" the surface of the blank, producing only a light "swirl" on the surface.
6. If the cutter contact appears excessive, or there isn't any contact at all, turn off the power switch and repeat step 4. This adjustment must be properly set to produce consistently accurate duplicate keys.

KEY DUPLICATION PROCEDURES

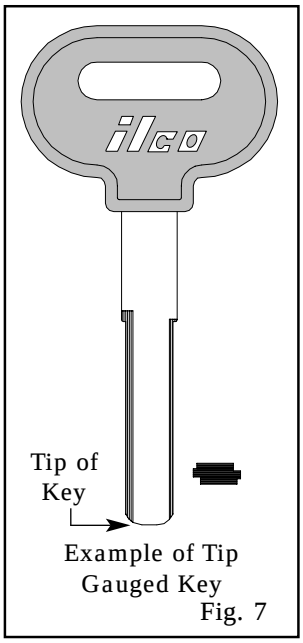
Gauging

Once the appropriate key blank has been selected and the depth calibration verified, the only step remaining before actually duplicating the key is to "clamp and gauge" the pattern key and key blank. Gauging is simply the process of positioning both keys to insure that the cut pattern on the original key is copied onto the key blank at the proper location.

There are two general types of keys which can be duplicated on the Nova 2000; shoulder gauged keys and tip gauged keys. These terms refer to the method by which a key is correctly oriented within a lock cylinder, relative to its pins or "tumblers". They are clamped into the Nova 2000 vise jaws using different techniques.



Example of Shoulder Gauged Key
Fig. 6



Example of Tip Gauged Key
Fig. 7

Shoulder Gauged Keys (See Fig. 6) - Keys that have a distinct square shoulder, such as the S48HF-P. These keys are positioned in the vise so that their shoulder surface is in contact with the front edge of the vise jaws when the clamp knob is tightened. (See Fig. 8)

Tip Gauged Keys (See Fig. 7) - Keys that have no shoulder or the shoulder is not square to the key blank (S32-YS-P, S50HF-P, etc.) are gauged using the tip of the key as the reference point. Locate the tip stop bars (Fig. 10) into the slots on the vise jaws as shown, butt the tip of both keys against the tip stop bars and tighten the clamp knobs. Remove the tip stop bars prior to cutting the key. (See Fig. 9)

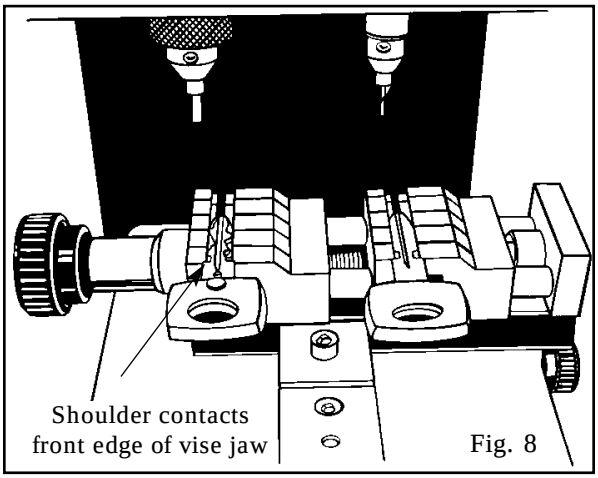


Fig. 8

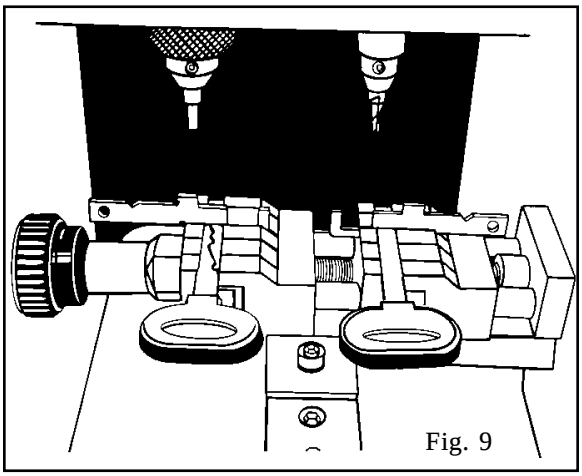


Fig. 9

Tip Stop Bars
D402302BA

Fig. 10

Duplication Procedure

NOTE: Always wear safety glasses or goggles when operating the Nova 2000 or any other key cutting device.

Only the duplication procedure for "sidewinder" high security auto keys will be covered in this example. Information regarding the duplication of dimple keys can be found in the primary manual accompanying the machine. Reminder: Do not use this machine for any purpose other than duplicating high security keys because of risk of injury and machine damage. Such use will immediately void the machine warranty.

One Hand Operation

Sidewinder type keys may easily be cut with the use of the carriage movement handle only, by pre-setting the depth. First load and gauge the original key in the left vise jaw in preparation for cutting. Do not load the blank key yet. Lower the Cutter Guide using the Vertical Movement Lever until it touches the **cut surface** of the original key (Fig. 11). While holding this depth, tighten the Depth Locking Knob firmly. The blank key may now be loaded, gauged, and cut without further adjustments to the Vertical Movement Lever.

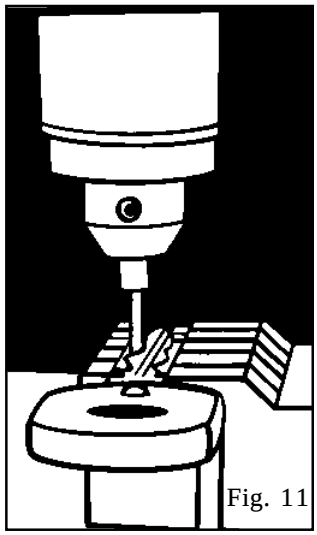


Fig. 11

With both keys loaded and properly gauged, lower the chip shield into position and switch on the cutter motor. Using the Carriage Movement Lever, position the vise containing the pattern key so that the cutter guide enters into the cuts on the key. Paying attention to the pattern key, trace the cutter guide against the cuts on the key. The "feel" of the cutting action is similar to using a router; operators quickly learn the most efficient direction of cut to use for various key types. A steady, even cutting pressure should be used; do not apply excessive force.

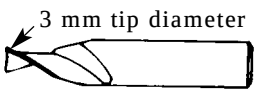
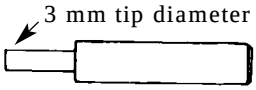
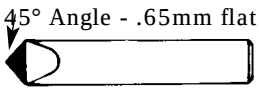
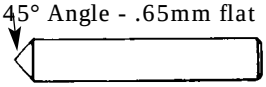
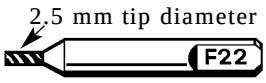
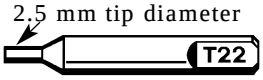
After the cuts on one side of the pattern key have been traced, remove the "half completed" key blank and flip it over to the other side and repeat the cutting process.

Key Cutting Tips

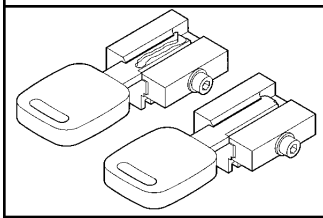
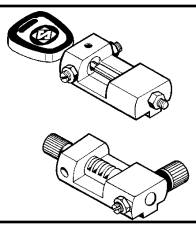
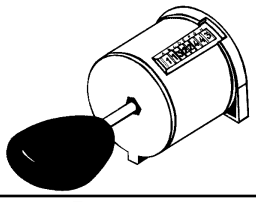
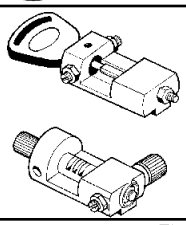
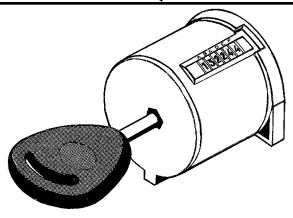
The following are a few pointers that will make your key duplicating efforts more productive.

1. Operate the Nova 2000 in a well lit, reasonably clean work area.
2. Replace the cutter on the machine when it starts to get dull. Symptoms include visible burrs on the duplicate keys produced, greater noise, and noticeably more pressure required to cut them.
3. Keep a spare cutter on hand for the machine; the slight expense is small compared to the potential lost sales you could experience awaiting a replacement.
4. Keep a small brush near the Nova 2000 at all times. Don't allow key shavings to accumulate on the machine; brushing the vise jaws off after every couple of keys is very important and can help prevent miscuts.
5. Maintain the machine properly. **LUBRICATION POINTS** are explained in the accompanying bound manual.

TABLE 1

Cutter	Cutter Guide	Application
 CU56-048 (260048)	 KD56-047 (260047)	BMW®, Mercedes Benz®, Infiniti®, Saab®, Honda®, VW®, Audi®
 CU56-043 (260043)	 KD56-044 (260044)	Keso®, Sargent/Keso, Dom®, BMW dimple type
 F22 - optional item except with Lexus	 T22 - optional item except with Lexus	Lexus® (Required) BMW®, Mercedes Benz®, Volvo®, Infiniti®, Saab®, Honda®, VW®, Audi® (Optional)

OPTIONAL ACCESSORIES

	To Fit	Part No.	Description
	Volkswagen® Audi® Porsche®	D711803ZB	Pair of Adapters - will allow the user to cut keys with internal cuts
	Jaguar® Tibbe	D707657ZB	Code attachment - Required to create a key by code. (8 cuts and 3 angles)
	Jaguar® Tibbe	D708005ZB	Decoder - Will reconstruct and identify the depth of cuts on a key (For 8 cut/3 angle version)
	Ford®/Jaguar® Tibbe	D705485ZB	Code Attachment - Required to create a key by code. (6 cuts and 4 angles)
	Ford®/Jaguar® Tibbe	D705322ZB	Decoder - Will reconstruct andidentify the depth of cuts on a key (6 cut/3 angle version)

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